September 21, 2005

Mr. Kent Mitchell
Town of Livermore Falls
Wastewater Treatment Facility
2 Main Street
Livermore Falls, ME 04254

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100315
Maine Waste Discharge License (WDL) Application #W002654-5L-G-R
Final MEPDES Permit/WDL

Dear Mr. Mitchell:

Enclosed, please find a copy of your **final** MEPDES permit and Maine WDL, which was approved by the Department of Environmental Protection. Please read the permit/license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision*."

We would like to make you aware of the fact that your monthly Discharge Monitoring Reports (DMRs) may not reflect the revisions in this permitting action for several months however, you are required to report applicable test results for parameters required by this MEPDES permit/WDL that do not appear on the DMR. Please see attached April 2003 O&M Newsletter article regarding this matter.

If you have any questions regarding the matter, please feel free to call me at 287-7659.

Sincerely,

Bill Hinkel
Division of Water Resource Regulation
Bureau of Land and Water Quality

Enc. cc: Beth DeHaas, DEP Roger Janson, USEPA

DMR Lag

When the Department renews discharge permits, the parameter limits may change or parameters may be added or deleted. In some cases, it is merely the replacement of the federally issued NPDES permit with a state-issued MEPDES permit that results in different limits. When the new permit is finalized, a copy of the permit is passed to our data entry staff for coding into EPA's Permits Compliance System (PCS) database. PCS was developed in the 1970's and is not user-friendly. Entering or changing parameters can take weeks or even months.

This can create a lag between the time your new permit becomes effective and the new permit limits appearing on your DMRs. If you are faced with this, it can create three different situations that have to be dealt with in different ways.

1. If the parameter was included on previous DMRs, but only the limit was changed, there will be a space for the data. Please go ahead and enter it. When the changes are made to PCS, the program will have the data and compare it to the new limit.

2. When a parameter is eliminated from monitoring in your new permit, but there is a delay in changing the DMR, you will have a space on the DMR that needs to be filled. For a parameter that has been eliminated, please enter the space on the DMR for that parameter only with "NODI-9" (No Discharge Indicator Code #9). This code means monitoring is conditional or not required this monitoring period.

3. When your new permit includes parameters for which monitoring was not previously required, and coding has not caught up on the DMRs, there will not be any space on the DMR identified for those parameters. In that case, please fill out an extra sheet of paper with the facility name and permit number, along with all of the information normally required for each parameter (parameter code, data, frequency of analysis, sample type, and number of exceedances). Each data point should be identified as monthly average, weekly average, daily max, etc. and the units of measurement such as mg/L or lb/day. Staple the extra sheet to the DMR so that the extra data stays with the DMR form. Our data entry staff cannot enter the data for the new parameters until the PCS coding catches up. When the PCS coding does catch up, our data entry staff will have the data right at hand to do the entry without having to take the extra time to seek it from your inspector or from you.

EPA is planning significant improvements for the PCS system that will be implemented in the next few years. These improvements should allow us to issue modified permits and DMRs concurrently. Until then we appreciate your assistance and patience in this effort.

Phil Garwood

IN THE MATTER OF

TOWN OF LIVERMORE FALLS	)	MAINE POLLUTANT DISCHARGE
LIVERMORE FALLS, ANDROSCOGGIN CTY., ME	)	ELIMINATION SYSTEM PERMIT
PUBLICLY OWNED TREATMENT WORKS	)	AND
#ME0100315	)	WASTE DISCHARGE LICENSE
#W002654-5L-G-R **APPROVAL**	)	**RENEWAL**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, *et seq*. and Maine law, 38 M.R.S.A., Section 414-A *et seq*., and applicable regulations**,** the Department of Environmental Protection (Department) has considered the application of the TOWN OF LIVERMORE FALLS (Town), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The Town has applied for a renewal of Waste Discharge License (WDL) #W002654-5L-E-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100315, which was issued on October 17, 2001, and two subsequent administrative modifications issued on October 24, 2003 and April 23, 2004. The 10/17/01 WDL/MEPDES permit authorized the monthly average discharge of up to 2.0 million gallons per day (MGD) of secondary treated wastewater from a publicly owned treatment works (POTW) to the Androscoggin River, Class C, in Livermore Falls, Maine, and is scheduled to expire on October 17, 2006. The 10/24/03 administrative modification served to change the minimum monitoring frequency requirements for biochemical oxygen demand and total suspended solids during the cold season (October through May) from three times per week to twice per week. The 4/23/04 administrative modification served to eliminate the monthly average total phosphorus limit of 5.5 lbs./day.

PERMIT SUMMARY

This permitting action is similar to the 10/17/01 permitting action and all subsequent administrative modifications thereof in that it is:

1. Carrying forward the monthly average discharge flow limit of 2.0 MGD;

2. Carrying forward technology-based monthly average, weekly average and daily maximum concentration limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS);

3. Carrying forward requirement to achieve a minimum of 85% removal for BOD_5 and TSS;

4. Carrying forward the daily maximum, technology-based concentration limit of 0.3 ml/L for settleable solids;

5. Carrying forward the monthly average and daily maximum concentration limits for *Escherichia coli* bacteria;

6. Carrying forward the daily maximum, technology-based concentration limit of 1.0 mg/L for total residual chlorine (TRC);

7. Carrying forward the seasonal (June 1 and September 30) monthly average concentration and mass reporting requirements for total phosphorus through permit expiration;

8. Carrying forward the seasonal (June 1 and September 30) weekly average concentration and mass reporting requirements for total phosphorus through September 30, 2006 followed by elimination of the weekly average reporting requirement during the remainder of the effective term of the permit;

9. Carrying forward the seasonal (June 1 and September 30) weekly average concentration and mass reporting requirements for orthophosphate through permit expiration;

10. Carrying forward the seasonal (June 1 and September 30) monthly average concentration reporting requirement for orthophosphate through permit expiration;

11. Carrying forward the technology-based pH range limit of 6.0 – 9.0 standard units (SU);

12. Carrying forward surveillance and screening level whole effluent toxicity (WET) and chemical-specific testing requirements; and

13. Carrying forward the minimum monitoring frequency requirements for all monitored parameters, except for a reduction in total phosphorus monitoring beginning in calendar year 2007.

PERMIT SUMMARY (cont'd)

This permitting action is different from the 10/17/01 permitting action and all subsequent administrative modifications thereof in that it is:

1. Eliminating separate warm season (June 1 – September 30) and cold season (October 1 – May 31) monthly average, weekly average and daily maximum mass limits for BOD_5 and TSS by revising the warm season limits based on the full licensed flow limit of 2.0 MGD;

2. Establishing a new water quality-based monthly average mass limit of 8.34 lbs./day for orthophosphate beginning June 1, 2006 and lasting through permit expiration;

3. Revising the minimum monitoring frequency requirement for total phosphorus from once per week to once per month beginning June 1, 2007 and lasting through permit expiration;

4. Establishing a chronic no observed effect level (C-NOEL) numeric limit of 0.185% for brook trout based on facility test results; and

5. Establishing a requirement for the Town to participate in seasonal (June 1 through September 30) ambient water quality monitoring of Gulf Island Pond at a frequency of 1/Week beginning June 1, 2006 and lasting through permit expiration.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated September 21, 2005**,** and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.

3. The provisions of the State's antidegradation policy, 38 M.R.S.A. §464(4)(F), will be met, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;

   (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

   (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and

   (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in Maine law, 38 M.R.S.A., §414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted application of the TOWN OF LIVERMORE FALLS to discharge a monthly average flow of up to 2.0 MGD of secondary treated sanitary wastewater from a publicly owned treatment works to the Androscoggin River, Class C, in Livermore Falls, Maine, SUBJECT TO THE FOLLOWING CONDITIONS, and all applicable standards and regulations including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. The expiration date of this permit is five (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS _____DAY OF_____, 2005.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
DAWN R. GALLAGHER, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 24, 2005
Date of application acceptance: March 24, 2005

Date filed with Board of Environmental Protection: _____.

This Order prepared by William F. Hinkel, BUREAU OF LAND & WATER QUALITY
#ME0100315 / #W002654-5L-G-R September 21, 2005

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period **beginning the effective date of this permit and lasting through permit expiration**, the permittee is authorized to discharge secondary treated sanitary wastewater from **Outfall #001A** to the Androscoggin River. Such discharges shall be limited and monitored by the permittee as specified below[(1)]:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow *[50050]*	2.0 MGD *[03]*	---	Report, MGD *[03]*	---	---	---	Continuous *[99/99]*	Recorder *[RC]*
BOD_5 *[00310]*	500 lbs./day *[26]*	750 lbs./day *[26]*	834 lbs./day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	2/Week *[02/07]*	Composite *[24]*
BOD_5 Percent Removal[(2)] *[81010]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
TSS *[00530]*	500 lbs./day *[26]*	750 lbs./day *[26]*	834 lbs./day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	2/Week *[02/07]*	Composite *[24]*
TSS Percent Removal[(2)] *[81011]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
Settleable Solids *[00545]*	---	---	---	---	---	0.3 ml/L *[25]*	1/Day *[01/01]*	Grab *[GR]*
***E. coli* Bacteria[(3)]** *[31633]*	---	---	---	142/100 ml[(4)] *[13]*	---	949/100 ml *[13]*	3/Week *[03/07]*	Grab *[GR]*
Total Residual Chlorine[(5)] *[50060]*	---	---	---	---	---	1.0 mg/L *[19]*	1/Day *[01/01]*	Grab *[GR]*
pH *[00400]*	---	---	---	---	---	6.0 – 9.0 SU *[12]*	1/Day *[01/01]*	Grab *[GR]*
Orthophosphate (June 1 – Sept. 30) [(6)] • **6/1/06 through permit expiration** *[04175]*	8.3 lbs./day *[26]*	Report lbs./day *[26]*	---	Report mg/L *[19]*	Report mg/L *[19]*	---	1/Week *[01/07]*	Composite *[24]*
Total Phosphorous (June 1 – Sept. 30) [(7)] • **Through 9/30/06** • **6/1/07 through permit expiration** *[70507]*	Report lbs./day Report lbs./day *[26]*	Report lbs./day --- *[26]*	---	Report mg/L Report mg/L *[19]*	Report mg/L --- *[19]*	---	1/Week *[01/07]* 1/Month *[01/30]*	Composite *[24]*

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

FOOTNOTES: See Pages 7 through 9 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

2. During the period **beginning the effective date of this permit and lasting through permit expiration for Outfall #001A**, the permittee shall conduct whole effluent toxicity and chemical-specific testing as follows:

SURVEILLANCE LEVEL TESTING - Beginning on the effective date of this permit and lasting through 12 months prior to permit expiration.

Whole Effluent Toxicity (WET) [8]	**Daily Maximum**	**Minimum Frequency**	**Sample Type**
Acute No Observed Effect Level (A-NOEL)			
Invertebrate-**Water Flea** (*Ceriodaphnia dubia*) *[TDA3B]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Vertebrate- **Brook Trout** (*Salvelinus fontinalis*) *[TDA6F]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Chronic No Observed Effect Level (C-NOEL)			
Invertebrate-**Water Flea** (*Ceriodaphnia dubia*) *[TBP3B]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Vertebrate- **Brook Trout** (*Salvelinus fontinalis*) *[TBQ6F]*	**0.185%** *[23]*	1/Year *[01/YR]*	Composite *[24]*
Chemical-Specific (Priority Pollutants, PP) [9] *[50008]*	Report ug/L *[28]*	1/Year *[01/YR]*	Composite/Grab *[24/GR]*

SCREENING LEVEL TESTING - Beginning 12 months prior to permit expiration and lasting through permit expiration.

Whole Effluent Toxicity (WET) [8]	**Daily Maximum**	**Minimum Frequency**	**Sample Type**
Acute No Observed Effect Level (A-NOEL)			
Invertebrate-**Water Flea** (*Ceriodaphnia dubia*) *[TDA3B]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Vertebrate-**Brook Trout** (*Salvelinus fontinalis*) *[TDA6F]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Chronic No Observed Effect Level (C-NOEL)		*[01/YR]*	
Invertebrate-**Water Flea** (*Ceriodaphnia dubia*) *[TBP3B]*	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Vertebrate-**Brook Trout** (*Salvelinus fontinalis*) *[TBQ6F]*	**0.185%** *[23]*	1/Year *[01/YR]*	Composite *[24]*
Chemical-Specific (Priority Pollutants, PP) [9] *[50008]*	Report ug/L *[28]*	1/Quarter *[01/90]*	Composite/Grab *[24/GR]*

FOOTNOTES: See Pages 7 through 9 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

1. **Monitoring** – All effluent monitoring shall be conducted at a location following the last treatment unit in the treatment process as to be representative of end-of-pipe effluent characteristics. Any change in sampling location must be approved by the Department in writing. Sampling and analysis must be conducted in accordance with: a) methods approved by 40 Code of Federal Regulations (CFR) Part 136; b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136; or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services.

2. **Percent Removal** – The treatment facility shall maintain a minimum of 85 percent removal of both biochemical oxygen demand and total suspended solids for all flows receiving secondary treatment. The percent removal shall be calculated based on influent and effluent concentration values. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L

3. **Seasonal Limits** – *E. coli* bacteria limits and monitoring requirements are seasonal and apply between May 15 and September 30 of each year. The Department reserves the right to require year-round disinfection to protect the health, safety and welfare of the public.

4. **Bacteria Reporting** – The monthly average *E. coli* bacteria limitation is a geometric mean limitation and sample results shall be reported as such.

5. **TRC Monitoring** – Monitoring for TRC is only required when elemental chlorine or chlorine-based compounds are in use for effluent disinfection. For instances when the facility is not disinfecting the effluent with chlorine-based compounds, the facility shall report **"NODI-9"** for this parameter on the monthly DMR.

6. **Total Phosphorus –** Total phosphorus monitoring shall be performed in accordance with Attachment A of this permit, *Protocol For Total P Sample Collection and Analysis*, unless otherwise specified by the Department.

7. **Orthophosphate –** Orthophosphate monitoring shall be performed in accordance with Attachment B of this permit, *Protocol For Orthophosphate Sample Collection and Analysis*, unless otherwise specified by the Department.

8. **Whole effluent toxicity (WET) testing** – Definitive WET testing is a multi-concentration testing event [a minimum of five dilutions bracketing the critical acute (0.735%) and chronic (0.185%) dilutions (mathematical inverse of dilution factor)], which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. A-NOEL is defined as the acute no observed effect level with survival as the end point. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

Beginning upon issuance of the permit and lasting through permit expiration, the permittee shall initiate WET testing at a frequency of once per year (1/Year) on the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis)*. Tests shall be conducted in a different calendar quarter each year, such that test results are available for all four calendar quarters after four years of testing. Results shall be reported to the Department within 30 days of the permittee receiving the test results from the laboratory conducting the testing. Invalid or problematic test results shall be identified in the submittal.

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following USEPA methods manuals.

a. Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013.

b. Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012.

The permittee is also required to analyze the effluent for the parameters specified in the analytic chemistry on the form in Attachment C of this permit every time a WET test is performed for compliance with this permit. Analytical chemistry is not required for WET tests conducted for a toxicity identification evaluation (TIE), toxicity reduction evaluation (TRE) or for other investigative purposes.

9. **Priority Pollutants** - (chemical-specific testing pursuant to Department rule Chapter 530.5) are those parameters listed by the USEPA pursuant to Section 307(a) of the Clean Water Act and published at 40 CFR Part 122, Appendix D, Tables II and III.

   Chemical-specific testing shall be conducted on samples collected at the same time as those collected for whole effluent toxicity tests, when applicable. Chemical-specific testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department. Results shall be submitted to the Department within thirty (30) days of the permittee receiving the data report from the laboratory conducting the testing**.**

   For the purposes of DMR reporting, enter a "NODI-9" for *NO* *testing done this monitoring period* or "1" for *YES*, *testing done this monitoring period*.

   Beginning upon issuance of this permit and lasting through 12 months prior to permit expiration, the permittee shall conduct surveillance level chemical-specific testing at a minimum frequency of once per year. Tests shall be conducted in a different calendar quarter each year, such that test results are available for all four calendar quarters after four years of testing. **Beginning 12 months prior to permit expiration and lasting through permit expiration,** the permittee shall conduct screening level chemical-specific testing at a minimum frequency of once per quarter in consecutive calendar quarters.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

All mercury sampling shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with USEPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry.

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.

2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.

3. The discharge shall not cause visible discoloration or turbidity in the receiving waters, which would impair the usages designated by the classification of the receiving waters.

4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

C. DISINFECTION

If chlorination is used as the means of disinfection, an approved chlorine contact tank providing the proper detention time consistent with good engineering practice must be utilized followed by a dechlorination system if the imposed total residual chlorine (TRC) limit cannot be achieved by dissipation in the detention tank. The TRC in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied, if necessary, shall provide a TRC concentration that will effectively reduce *E. coli* bacteria levels to or below those specified in Special Condition A, "*Effluent Limitation and Monitoring Requirements,*" above.

D. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade III** certificate pursuant to Title 32 M.R.S.A., Section 4171 et seq. All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

SPECIAL CONDITIONS

E. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office such that the DMR's are received by the Department on or before the fifteenth (15th) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the following address:

Department of Environmental Protection
Bureau of Land and Water Quality
Division of Engineering, Compliance and Technical Assistance
17 State House Station
Augusta, ME 04333-0017

F. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of the following.

1. Any introduction of pollutants into the wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and

2. Any substantial change (increase or decrease) in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants into the system at the time of permit issuance. For the purposes of this section, notice regarding substantial change shall include information on:

   (a) the quality and quantity of wastewater introduced to the wastewater collection and treatment system; and

   (b) any anticipated impact caused by the change in the quantity or quality of the wastewater to be discharged from the treatment system.

G. LIMITATIONS FOR INDUSTRIAL USERS

Pollutants introduced into the wastewater collection and treatment system by a non-domestic source (user) shall not pass through or interfere with the operation of the treatment system.

H. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall #001A. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit**.**

SPECIAL CONDITIONS

I. WET WEATHER FLOW MANAGEMENT PLAN

The treatment facility staff shall develop and maintain a Wet Weather Management Plan to direct the staff on how to operate the facility effectively during periods of high flow. The Department acknowledges that the existing collection system may deliver flows in excess of the monthly average design capacity of the treatment plant during periods of high infiltration and rainfall. The revised plan shall include operating procedures for a range of intensities, address solids handling procedures (including septic waste and other high strength wastes if applicable) and provide written operating and maintenance procedures during the events.

Once the Wet Weather Management Plan has been approved, the permittee shall review their plan annually and record any necessary changes to keep the plan up to date.

J. OPERATION & MAINTENANCE (O&M) PLAN

The permittee shall maintain a current written comprehensive Operation & Maintenance (O&M) Plan at the facility. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

By December 31 of each year, **or within 90 days of any process changes or minor equipment upgrades,** the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and USEPA personnel upon request.

Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility, the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

K. AMBIENT WATER QUALITY MONITORING

Between June 1 and September 30 of each year (beginning June 1, 2006)
[PCS Code 21599], the permittee shall independently, or in conjunction with other parties, participate in ambient water quality monitoring of Gulf Island Pond and/or designated segments of the Androscoggin River at a frequency of once per week (1/Week). There must be at least 72 hours between sampling events. Samples for total phosphorus, ortho-phosphorus, chlorophyll *a*, secchi disc readings and dissolved oxygen/temperature profiles at one-meter increments and physical observations shall be taken at five (5) sampling stations. The sampling stations are designated as Twin Bridges, Upper Narrows, Lower Narrows, Gulf Island Pond 4 and Gulf Island Dam (deep hole). Sampling must be consistent with the protocols established in a document entitled, *Androscoggin River & Gulf Island Pond Water Quality Monitoring Plan 2004, Acheron, May 2004* or the most current revisions to said plan approved by the Department.

SPECIAL CONDITIONS

K. AMBIENT WATER QUALITY MONITORING (cont'd)

By November 30th of each year (beginning November 30, 2006), ***[PCS Code 21899],*** the permittee shall independently, or in conjunction with other parties, submit a written report to the Department summarizing the results of the monitoring for that year. The report shall include, but not be limited to, all the field data and any pertinent field observations (algal blooms in particular), a statistical analysis of the field data and interpretation and/or conclusions drawn from the analysis and/or data and any recommendations for revisions to the monitoring plan (if appropriate) for the following year.

By February 1st of each year (beginning February 1, 2007), ***[PCS Code 34099],*** the permittee shall independently, or in conjunction with other parties, submit an updated ambient water quality monitoring plan for that year to the Department for review and approval with or without conditions.

Any proposed ambient water quality monitoring or other site-specific information gathering efforts conducted by the permittee, agent(s) for the permittee or other third party, must be approved by the Department prior to such undertaking.

L. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time, and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional effluent or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

M. SEVERABILITY

In the event that any provision, or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all respects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

Attachment A

Protocol for Total P Sample Collection and Analysis

Approved Analytical Methods: EPA 365.2, SM 4500-P B.5 E.

Sample Collection: The Maine DEP is requesting that total phosphorus analysis be conducted on composite effluent samples. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-4 degrees C. If the sample is being sent to a commercial laboratory or analysis cannot be performed the day of collection then the sample must be preserved by the addition of 2 mls of concentrated H_2SO_4 per liter and refrigerated at 0-4 degrees C. The holding time for a preserved sample is 28 days

QA/QC: Run a distilled water blank and at least 2 standards with each series of samples. If standards do not agree within 2% of the true value then prepare a new calibration curve.

Every month run a blank on the composite jug and sample line. Automatically, draw distilled water into the sample jug using the sample collection line. Let this water set in the jug for 24 hours and then analyze for total phosphorus. Preserve this sample as described above.

April 2004

Attachment B

Protocol for Orthophosphate Sample Collection and Analysis

Approved Analytical Methods: EPA 365.2, SM 4500-P.E.

Sample Collection: The Maine DEP is requesting that orthophosphate analysis be conducted on composite effluent samples. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-4 degrees C. The sample must be filtered immediately (within 15 minutes) after collection using a pre-washed 0.45-um membrane filter. Be sure to follow one of the pre-washing procedures described in the approved methods. Also, be aware that you will likely want to use a separate suction hose and collection container for the orthophosphate filtering process. If the sample is being sent to a commercial laboratory or analysis cannot be performed within 2 hours after collection then the sample must be kept at 0-4 degrees C. There is a 48-hour holding time for this sample although analysis should be done sooner, if possible.

QA/QC: Same as described in Total P Protocol.

April 2004

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
MAINE WASTE DISCHARGE LICENSE

FACT SHEET

DATE: **SEPTEMBER 21, 2005**

PERMIT NUMBER: **#ME0100315**
LICENSE NUMBER: **#W002654-5L-G-R**

NAME AND MAILING ADDRESS OF APPLICANT:

TOWN OF LIVERMORE FALLS
LIVERMORE FALLS WASTEWATER TREATMENT FACILITY
2 MAIN STREET
LIVERMORE FALLS, MAINE 04254

COUNTY: **ANDROSCOGGIN**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

LIVERMORE FALLS WASTEWATER TREATMENT FACILITY
FOUNDRY ROAD
LIVERMORE FALLS, MAINE

RECEIVING WATER / CLASSIFICATION: **ANDROSCOGGIN RIVER / CLASS C**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **MR. KENT MITCHELL**
(207) 897-2339

1. APPLICATION SUMMARY

Application: The Town of Livermore Falls (Town) has applied for a renewal of Waste Discharge License (WDL) #W002654-5L-E-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100315, which was issued on October 17, 2001, and two subsequent administrative modifications issued on October 24, 2003 and April 23, 2004. The 10/17/01 WDL/MEPDES permit authorized the monthly average discharge of up to 2.0 million gallons per day (MGD) of secondary treated wastewater from a publicly owned treatment works (POTW) to the Androscoggin River, Class C, in Livermore Falls, Maine, and is scheduled to expire on October 17, 2006. The 10/24/03 administrative modification served to change the minimum monitoring frequency requirements for biochemical oxygen demand and total suspended solids during the cold season (October through May) from three times per week to twice per week. The 4/23/04 administrative modification served to eliminate the monthly average total phosphorus limit of 5.5 lbs./day.

2. PERMIT SUMMARY

a. Terms and Conditions: **This permitting action is similar to the 10/17/01 permitting action and all administrative modifications thereof in that it is:**

1. Carrying forward the monthly average discharge flow limit of 2.0 MGD;

2. Carrying forward technology-based monthly average, weekly average and daily maximum concentration limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS);

3. Carrying forward requirement to achieve a minimum of 85% removal for BOD_5 and TSS;

4. Carrying forward the daily maximum, technology-based concentration limit of 0.3 ml/L for settleable solids;

5. Carrying forward the monthly average and daily maximum concentration limits for *Escherichia coli* bacteria;

6. Carrying forward the daily maximum, technology-based concentration limit of 1.0 mg/L for total residual chlorine (TRC);

7. Carrying forward the seasonal (June 1 and September 30) monthly average concentration and mass reporting requirements for total phosphorus through permit expiration;

8. Carrying forward the seasonal (June 1 and September 30) weekly average concentration and mass reporting requirements for total phosphorus through September 30, 2006 followed by elimination of the weekly average reporting requirement during the remainder of the effective term of the permit;

9. Carrying forward the seasonal (June 1 and September 30) weekly average concentration and mass reporting requirements for orthophosphate through permit expiration;

10. Carrying forward the seasonal (June 1 and September 30) monthly average concentration reporting requirement for orthophosphate through permit expiration;

11. Carrying forward the technology-based pH range limit of 6.0 – 9.0 standard units (SU);

12. Carrying forward surveillance and screening level whole effluent toxicity (WET) and chemical-specific testing requirements; and

13. Carrying forward the minimum monitoring frequency requirements for all monitored parameters, except for a reduction in total phosphorus monitoring beginning in calendar year 2007.

2. PERMIT SUMMARY (cont'd)

This permitting action is different from the 10/17/01 permitting action and all subsequent administrative modifications thereof in that it is:

1. Eliminating separate warm season (June 1 – September 30) and cold season (October 1 – May 31) monthly average, weekly average and daily maximum mass limits for BOD_5 and TSS by revising the warm season limits based on the full licensed flow limit of 2.0 MGD;

2. Establishing a new water quality-based monthly average mass limit of 8.34 lbs./day for orthophosphate beginning June 1, 2006 and lasting through permit expiration;

3. Revising the minimum monitoring frequency requirement for total phosphorus from once per week to once per month beginning June 1, 2007 and lasting through permit expiration;

4. Establishing a chronic no observed effect level (C-NOEL) numeric limit of 0.185% for brook trout based on facility test results; and

5. Establishing a requirement for the Town to participate in seasonal (June 1 through September 30) ambient water quality monitoring of Gulf Island Pond at a frequency of 1/Week beginning June 1, 2006 and lasting through permit expiration.

b. History: The most recent licensing/permitting actions include the following:

April 14, 1994 – The Department issued WDL #W002654-46-C-R to the Town for the discharge of treated wastewater to the Androscoggin River in Livermore Falls. The 4/14/94 WDL superseded WDL ##W002654-46-B-R issued on June 27, 1988.

July 1, 1999 – The Department issued Water Quality Certification #W002654-68-D-N to the USEPA for the proposed discharge in a pending National Pollutant Discharge Elimination System (NPDES) permit application.

August 30, 1999 – The USEPA issued NPDES permit #ME0100315 to the Town for the monthly average discharge of up to 2.0 MGD of treated wastewater to the Androscoggin River in Livermore Falls.

June 1, 2000 – The Department administratively modified WDL #W002654-46-C-R by establishing interim monthly average and daily maximum concentration limits of 126.8 parts per trillion (ppt) and 190.2 ppt, respectively, for mercury. It is noted the limitations have not been incorporated into Special Condition A, *Effluent Limitations And Monitoring Requirements*, of this permit as limitations and monitoring requirements have been subject to numerous modifications in recent years. However, the interim limitations remain in effect and enforceable and any modifications to the limits and or monitoring requirements will be formalized outside of this permitting document.

October 17, 2001 – The Department issued WDL #W002654-5L-E-R / MEPDES Permit #ME0100315 to the Town for the discharge of treated wastewater to the Androscoggin River in Livermore Falls. The 10/27/01 permitting action superseded WDL #W002654-46-C-R issued on April 14, 1994 and the NPDES permit issued by the USEPA on August 30, 1999.

2. PERMIT SUMMARY (cont'd)

November 14, 2001 – The Town filed an appeal of the 10/17/01 Department Order to the Maine Board of Environmental Protection (BEP). The Town's objection and basis for appeal was focused on the requirement to perform seasonal phosphorus monitoring.

March 21, 2002 – The BEP affirmed the 10/17/01 Department Order establishing effluent limitations and monitoring requirements for phosphorus in Board Order #W002654-5L-F-Z.

October 23, 2003 – The Department issued a letter to the Town thereby administratively modifying WDL #W002654-5L-E-R and revising the minimum monitoring frequency requirements for biochemical oxygen demand and total suspended solids during the cold season from three times per week to twice per week.

April 23, 2004 – The Department issued a letter to the Town thereby administratively modifying WDL #W002654-5L-E-R and eliminating the monthly average mass limit of 5.5 lbs./day for total phosphorus. As of 4/23/04, the Department had not completed a total maximum daily load (TMDL) for the Androscoggin River to determine whether the phosphorus limit, which was based on a Department best professional judgment determination, was appropriate for protection of receiving water quality. Therefore, the numeric effluent phosphorus limit was eliminated.

January 3, 2005 – The Department issued a draft document entitled, *Androscoggin River Total Maximum Daily Load, Gulf Island Pond, Livermore Falls Impoundment, December 2004*, for public comment.

March 24, 2005 – The Town submitted a General Application for renewal of WDL #W002654-5L-E-R. The application was accepted for processing on March 24, 2005 and was assigned WDL #W002654-5L-G-R/MEPDES #ME0100315.

May 2005 – The Department submitted the *Androscoggin River Total Maximum Daily Load, Gulf Island Pond, Livermore Falls Impoundment, December 2004* to the USEPA.

July 18, 2005 – The USEPA approved a total maximum daily load (TMDL) entitled, May 2005 TMDL, Final for the Androscoggin River.

c. Source Description: The Livermore Falls Wastewater Treatment Facility (facility hereinafter) receives commercial and residential sanitary wastewater from customers in the Town of Livermore Falls and a portion of the Town of Jay. There are no significant industrial users within the collection system and there are no combined sewer overflow (CSO) points associated with the collection system. The collection system contains both separate and combined storm water and sanitary sewer systems. Livermore Falls receives septage (septic tank waste) at the treatment facility, but is not authorized to include septage into the wastewater treatment process. Instead, septage is added to the solids handling system (combined with sludge and grit removed during wastewater treatment) for disposal at the Little River Compost Facility in Lisbon, as detailed in Section 1.d, *Wastewater Treatment,* of this Fact Sheet.

2. PERMIT SUMMARY (cont'd)

d. Wastewater Treatment: The Town provides a secondary level of wastewater treatment via trickling filter towers and secondary clarification. Sanitary wastewater generated in the facility's service area is conveyed via a sewer collection system and four (4) pump stations to the facility headworks building where it passes through an in-channel grinder or a manual bar rack for screening, followed by an aerated grit chamber. Removed grit is pumped to a grit classifier-cleaner, then disposed of as described below. Wastewater then flows into two (2) 61,172 gallon capacity rectangular primary clarifiers from which the primary effluent is pumped to two (2) 25,133 cubic foot trickling filter towers for biological treatment on the tower filter media. The tower effluent is directed to two (2) 176,000-gallon capacity circular secondary clarifiers. To maintain optimum treatment conditions within the trickling filter towers, a portion of the effluent flow is diverted back through the primary clarifiers during low influent flow conditions. From the secondary clarifiers, the effluent goes to a 20,493-gallon capacity chlorine contact tank for disinfection. Final effluent is conveyed for discharge to the Androscoggin River via a 24-inch diameter pipe that extends 30 feet into the river.

The facility receives a maximum of 20,000 gallons per day (GPD) of septage (septic tank waste) from licensed septage haulers to a maximum of 80,000 gallons per year (GPY). However, the facility is not authorized to include septage into the wastewater treatment process at the facility. Instead, septage is delivered to a 4,860 gallon septage receiving tank, then pumped to any of three aerated holding tanks, where it is combined with sludge wasted from the primary and secondary clarifiers. The holding tank capacities are 112,350 gallons, 56,280 gallons, and 126,700 gallons. The combined septage/sludge is then pumped to a centrifuge for concentration. The concentrated septage/sludge is combined with grit removed in the initial treatment stage at the headworks building and shipped to the Little River Compost Facility in Lisbon for disposal.

3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A., Section 420, and Department Regulation Chapter 530.5, Surface Water Toxics Control Program requires the regulation of toxic substances at the levels set forth for Federal Water Quality Criteria as published by the U.S. Environmental Protection Agency pursuant to the Clean Water Act.

4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A., Section 467(1)(A)(2) classifies the Androscoggin River at the point of discharge as a Class C waterway. Maine law, 38 M.R.S.A., Section 465(4), describes the standards for Class C waters.

5. RECEIVING WATER QUALITY CONDITIONS

The State of Maine 2004 Integrated Water Quality Monitoring and Assessment Report, prepared pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists a 21.7-mile reach of the Androscoggin River, main stem, from Riley Dam to Nezinscot River (Hydrologic Unit Code #ME0104000206/Waterbody ID #423R), which includes the receiving water at the point of discharge, as, *"Category 4-B-1: Rivers and Streams Impaired by Pollutants, Pollution Control Requirements Reasonably Expected to Result in Attainment."* Impairment in this context refers to a statewide fish consumption advisory due to the presence of dioxin.

In addition, the Report lists all freshwaters in Maine as *"Category 5-C: Waters Impaired by Atmospheric Deposition."* Impairment in this context refers to the designated use of recreational fishing due to elevated levels of mercury in some fish caused by atmospheric deposition. As a result, the State has established a fish consumption advisory for all freshwaters in Maine. Pursuant to Maine law, 38 M.R.S.A. §420(1-B)(B), *"a facility is not in violation of the ambient criteria for mercury if the facility is in compliance with an interim discharge limit established by the Department pursuant to section 413 subsection 11."* The Department has established interim monthly average and daily maximum mercury concentration limits for this facility.

In addition, the Report identifies a 4.0-mile reach of the Androscoggin River, main stem, four miles upstream of the Gulf Island Dam (HUC #ME0104000208/Waterbody ID #424R) as, *"Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)."* Impairment in this context refers to dissolved oxygen criteria for Class C waters, which is discussed further in the following paragraphs.

Current Water Quality Assessment/Modeling

Two segments of the Androscoggin River are on Maine's 303d list as bodies of water that do not attain Class C water quality standards. According to the total maximum daily load (TMDL) entitled, *Androscoggin River Total Maximum Daily Load Gulf Island Pond, Livermore Falls Impoundment*, prepared by the Department and approved by the USEPA, Gulf Island Pond (GIP) does not attain Class C minimum and monthly average dissolved oxygen (DO) criteria in a four-mile segment directly above Gulf Island Dam, primarily in deeper areas of the water column from 30 to 80 feet of depth. In addition, algae blooms occur from excessive amounts of phosphorus discharged to the river flowing into the pond preventing attainment of the designated uses of water contact recreation. In addition to GIP, the Livermore Falls impoundment just below the International Paper (IP) mill does not attain Class C aquatic life criteria, as indicated by recent water quality evaluations utilizing macro-invertebrate sampling and the use of a linear discriminate modeling.

The pollutants of concern are carbonaceous biochemical oxygen demand (CBOD), orthophosphate (ortho-P), total phosphorus (total-P), and total suspended solids (TSS). Reduction of phosphorus is needed to eliminate algae blooms in Gulf Island Pond. Reduction of CBOD, TSS, and phosphorus is needed to improve DO levels to attainment of Class C criteria. In addition, an in-stream oxygen injection system currently located five miles above Gulf Island Dam needs to be re-designed to inject an additional quantity of oxygen into the pond.

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

Discharges from paper mills located in Berlin, New Hampshire, Rumford, Maine, and Jay, Maine are the major sources of most of the pollutants affecting GIP water quality. Municipal point sources are located in Berlin, New Hampshire, Gorham, New Hampshire, Bethel, Maine, Rumford-Mexico, Maine, and Livermore Falls, Maine.

TSS and algae contribute to sediment oxygen demand (SOD), a major source of oxygen depletion in the deeper areas of Gulf Island Pond. The Department investigated the importance of SOD, oxygen injection, and paper mill BOD input levels on dissolved oxygen levels and summarized the findings in a report entitled, *Androscoggin River Modeling Report and Alternative Analysis, June 2002*. Sediment oxygen demand was found to be the most important factor since the model prediction of DO changed the most within given percentages of change for SOD. Varying oxygen injection rates resulted in the second largest response to model prediction of DO and the amounts input for the paper mill BOD inputs resulted in the lowest response of the model DO. This is a useful exercise in showing that reducing pollutants that contribute to SOD (algae, TSS) and oxygen injection are more efficient remediation actions than reducing paper mill BOD. TSS is the major cause of non-attainment of Class C aquatic life criteria in the Livermore Falls impoundment. It is noted, however, Department modeling demonstrates that the discharge of BOD and TSS from the Livermore Falls facility is insignificant to SOD levels and DO depletion in Gulf Island Pond and does not recommend limiting BOD and TSS loading rates below the rates based on the monthly average effluent flow design capacity of the treatment plant.

Component analysis and river modeling indicate that the municipal sources of total-P and ortho-P from the Berlin, Gorham, Bethel and Rumford-Mexico POTWs have a *de-minimis* contribution to algae growth in Gulf Island Pond and that the discharge of ortho-P from the Livermore Falls facility has a significant contribution to algae growth in Gulf Island Pond in a river segment of demonstrated low phosphorus assimilation. The component analysis of phosphorus loads discharged in 2004 (Figure 10 of the TMDL) indicates that paper mills are still the largest source of phosphorus and account for about 70% of the total-P and 80% of the ortho-P entering the pond. International Paper is the largest single source accounting for 45% of the total-P and 57% of the ortho-P entering the pond. MeadWestvaco is the second largest single source of phosphorus, accounting for about 14% of the total-P and 21% of the ortho-P entering the pond. The Fraser Paper mill in Berlin, New Hampshire accounts for about 11% of the total-P entering the pond, but only 2% of the ortho-P entering the pond. The component analysis indicates that the Livermore Falls facility accounts for 2.8% of total phosphorus loads and 12.7% of ortho-P loads at the Gulf Island Pond entrance and is considered to be a significant contributor of ortho-P loading to the pond. Although the municipal dischargers on the upper portion of the river do not represent significant sources of phosphorus leading to algae growth, all municipal point sources are included in the TMDL.

The rapid loss of ortho-P in the 2004 ambient data in the river from Berlin, New Hampshire to Jay, Maine implies a high ortho-P assimilation rate. The ortho-P appears to remain nearly constant from Jay to Turner, Maine implying a low ortho-P assimilation rate. The difference is likely because the Androscoggin River is shallower and more free-flowing from Berlin to Jay as opposed to below Jay, which is impounded and deep. Shallower water is more suited to growth of bottom-attached plants which uptake ortho-P. The Department's experience modeling ortho-P uptake in other rivers indicates that as ortho-P concentrations increase, the rate of assimilation of ortho-P also increases.

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

The threshold for phosphorus in the TMDL is to maintain the pond averaged chlorophyll-a to under 10 parts per billion (ppb). There are different combinations of total-P and ortho-P that could result in obtaining this goal.

Gulf Island Dam contributes to non-attainment of DO criteria and the growth of algae blooms by creating an environment of low water movement and low vertical mixing within the water column. Modeling also indicates that the presence of the dam accounts for about 30% of the algae levels in Gulf Island Pond with the TMDL implemented. Non-attainment of Class C DO criteria in deeper portions of the pond is predicted by the water quality model, even if point source discharges are eliminated, due to sediment oxygen demand from natural and non-point sources of pollution. There are limited opportunities for the control of significant amounts of non-point source pollution given the relatively undeveloped nature of this large watershed.

Based on identification through the TMDL that Livermore Falls is a significant source of ortho-P loading to Gulf Island Pond in the Androscoggin River, this permitting action is establishing a monthly average mass limit for ortho-P and monitoring requirements for total-P as discussed in Section 6(g) of this Fact Sheet, *Effluent Limitations and Monitoring Requirements*.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Flow: The previous permitting action established a monthly average discharge flow limit of 2.0 million gallons per day (MGD) based on the design capacity of the treatment facility, which is being carried forward in this permitting action. This permitting action is also carrying forward the continuous recorder monitoring requirement for discharge flow.

b. Dilution Factors: Dilution factors associated with the discharge from the Livermore Falls wastewater treatment facility were derived in accordance with freshwater protocols established in Department Regulation Chapter 530.5, *Surface Water Toxics Control Program*, October 1994. With a monthly average treatment plant design flow of 2.0 MGD, dilution calculations are as follows:

Acute: 1Q10 = 1,673.0 cfs $\Rightarrow \frac{(1{,}673.0 \text{ cfs})(0.6464) + 2.0 \text{ MGD}}{2.0 \text{ MGD}} = 542{:}1$

Modified Acute: ¼ 1Q10 = 419 cfs $\Rightarrow \frac{(419.0 \text{ cfs})(0.6464) + 2.0 \text{ MGD}}{2.0 \text{ MGD}} = 136{:}1$

Chronic: 7Q10 = 1,673.0 cfs $\Rightarrow \frac{(1{,}673.0 \text{ cfs})(0.6464) + 2.0 \text{ MGD}}{2.0 \text{ MGD}} = 542{:}1$

Harmonic Mean = 3,197.0 cfs $\Rightarrow \frac{(3{,}197.0 \text{ cfs})(0.6464) + 2.0 \text{ MGD}}{2.0 \text{ MGD}} = 1{,}034{:}1$

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Department rule Chapter 530.5 states:

> *Analysis using numerical acute criteria for aquatic life must be based on ¼ of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone, according to EPA's Mixing Zone Policy and to ensure a Zone of Passage of at least ¾ of the cross-sectional area of any stream as required by Department rule. Where it can be demonstrated that a discharge achieves complete and rapid mixing with the receiving water, by way of an efficient diffuser or other effective method, analyses may use a greater proportion of the stream design flow, up to and including all of it, as long as the required Zone of Passage is maintained.*

The Town has not submitted information or data to the Department to demonstrate the mixing characteristics of the effluent with the receiving waters. Therefore, the Department is utilizing the default stream flow of ¼ 1Q10 in acute evaluations in accordance with Chapter 530.5.

c. Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS): The previous permitting action established monthly average and weekly average BOD_5 & TSS concentration limits of 30 mg/L and 45 mg/L, respectively, which were based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B) as defined in 40 CFR 133.102 and Department rule 06-096 CMR Chapter 525(3)(III). The previous permitting action also established daily maximum BOD_5 & TSS concentration limits of 50 mg/L based on a Department best professional judgment (BPJ) of best practicable treatment (BPT). All three technology-based concentration limits are being carried forward in this permitting action.

Department rule, 06-096 CMR, Chapter 523(6)(f) states that all pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass. The previous permitting action established separate warm season (June 1 – September 30) and cold season (October 1 – May 31) monthly average, weekly average and daily maximum technology-based mass limits. Cold season mass limits were derived based on the applicable concentration limits and design capacity of the treatment facility as follows:

Monthly Average Mass Limit: (30 mg/L)(8.34 lbs./gallon)(2.0 MGD) = 500 lbs./day
Weekly Average Mass Limit: (45 mg/L)(8.34 lbs./gallon)(2.0 MGD) = 750 lbs./day
Daily Maximum Mass Limit: (50 mg/L)(8.34 lbs./gallon)(2.0 MGD) = 834 lbs./day

Warm season mass limits were derived using the previously licensed discharge flow limit of 1.0 MGD associated with the facility prior to the March 2000 facility upgrade due to concerns and lack of data at that time that increased BOD_5 & TSS loading during the critical warm season would result in adverse impacts to receiving water quality. The Department has since completed river modeling which indicate that the year-round discharge of BOD and TSS from the Livermore Falls facility at rates based on the design capacity of the plant (2.0 MGD) is an insignificant factor in SOD levels and DO depletion in Gulf Island Pond.

Generally, anti-backsliding provisions found in Chapter 523(5)(l) of the Department's rules prohibit the Department from reissuing a permit with less stringent limitations than the previous license/permit. The anti-backsliding provisions of Department rule Chapter 523(5)(l)(2) state, *"In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA,*

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

a permit may not be renewed, reissued or modified on the basis of effluent guidelines promulgated under section 304(b) of the CWA subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit." Chapter 523(5)(l)(2)(i)(B)(1) of the Department's rules does, however, authorize backsliding if the Department determines that *"Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified application of a less stringent effluent limitation at the time of permit issuance."* In the case of the Livermore Falls facility, the Department established BOD_5 and TSS mass limits in the previous permitting action based on a highly conservative best professional judgment determination of the level needed to protect receiving water quality. Subsequent to issuance of the previous permitting action, the Department determined that the discharge of BOD_5 and TSS at rates based on the actual design capacity of the facility is insignificant in terms of water quality impacts, SOD levels and DO depletion. Therefore, the anti-backsliding provisions of Department rules have been sufficient satisfied in that revising (reducing) the warm season BOD_5 and TSS limits based on the design capacity of the treatment facility, which is consistent with the derivation of technology-based mass limits for other POTWs, is appropriate and justified at this time. Therefore, this permitting action is revising the monthly average, weekly average and daily maximum BOD_5 & TSS mass limits during the warm season of June 1 through September 30 to 500 lbs./day, 750 lbs./day and 834 lbs./day, consistent with the limits established for the cold season months.

The previous permitting action established, and this permitting action is carrying forward, a requirement for a minimum of 85% removal of BOD_5 & TSS pursuant to Department rule 06-096 CMR Chapter 525(3)(III)(a)(3) and (b)(3).

This permitting action is carrying forward the minimum monitoring frequency requirement of twice per week (2/Week), which was established in the 10/24/03 administrative modification, and which is less frequent than Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD, based on a review of the most recent 60 months of effluent data on file and a Department BPJ determination of the minimum level of monitoring necessary to evaluate compliance with these limits.

d. Settleable Solids – The previous permitting action established a daily maximum technology-based concentration limit of 0.3 ml/L for settleable solids and a minimum monitoring frequency requirement of once per day (1/Day), which are being carried forward in this permitting action. The daily maximum concentration limit of 0.3 ml/L is based on a Department BPJ determination that this limit provides sufficient information to assess whether the treatment facility is providing BPT, and the minimum monitoring frequency requirement is based on Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD

e. *Escherichia coli* – The pervious permitting action established seasonal (May 15–September 30) monthly average and daily maximum concentration limits for *E. coli* bacteria of 142 colonies/100 ml (geometric mean) and 949 colonies/100 ml (instantaneous level), respectively, which were based on the State of Maine Water Classification Program criteria for Class C waters found at 38 M.R.S.A. §465(4)(B), and separate warm season and cold season minimum monitoring frequency requirements of twice per week and three time per week, respectively. This permitting action is carrying forward both concentration limitations based on the Water Classification Program criteria, is revising the minimum monitoring frequency

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

requirement to three times per week (3/Week) on a year-round basis based on Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD. Although *E. coli* bacteria limits are seasonal and apply between May 15 and September 30 of each year, the Department reserves the right to impose year-round bacteria limits if deemed necessary to protect the health, safety and welfare of the public.

f. Total Residual Chlorine (TRC): The previous permitting action established a daily maximum technology-based concentration limit of 1.0 mg/L for TRC and a minimum monitoring frequency requirement of once per day. Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department licensing/permitting actions impose the more stringent of either a water quality-based or BPT based limit. End-of-pipe acute and chronic water quality based concentration thresholds may be calculated as follows:

			Calculated	
Acute (A) Criterion	Chronic (C) Criterion	Modified A & C Dilution Factors	Acute Threshold	Chronic Threshold
0.019 mg/L	0.011 mg/L	136:1 (Mod. A) 542:1 (C)	2.6 mg/L	6.0 mg/L

The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their effluent with elemental chlorine or chlorine-based compounds. The BPT-based limit of 1.0 mg/L is more stringent than the calculated acute water quality-based threshold of 2.6 mg/L and is therefore being carried forward in this permitting action. This permitting action is carrying forward the minimum monitoring frequency once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD. TRC monitoring must be performed during any period in which chlorine-based compounds are in for effluent disinfection. For instances when chlorine-based compounds are not used for disinfection during an entire reporting period, the facility shall report **"NODI-9"** for this parameter on the monthly Discharge Monitoring Report (DMR).

g. Total Phosphorus (Total-P) and Orthophosphate (Ortho-P): The previous permitting action established monthly average concentration and mass reporting requirements for total phosphorus (total-P) during the warm season (June 1 – September 30) and a three-year schedule of compliance for imposition of a monthly average total-P mass limit of 5.5 lbs./day. The mass limit was scheduled to become effective on October 17, 2004 and was based on a Department BPJ determination of the level necessary to protect receiving water quality and to prevent algal blooms in Gulf Island Pond. On April 23, 2004, the Department administratively modified the 10/17/01 permit to eliminate the monthly average mass limit of 5.5 lbs./day as expectations to finalize the Androscoggin River TMDL were not completed. The administrative modification did, however, establish a new requirement to report monthly average and weekly average concentration and mass values for orthophosphate (ortho-P), carried forward the requirement to report monthly average concentration and mass values for total-P, and established a new requirement to report weekly average concentration and mass values for total-P during the warm season (June 1 through September 30) of each year of the remaining term of the permit.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

As discussed in Section 5 of this Fact Sheet, *Receiving Water Quality Conditions*, modeling performed by the Department indicates that the Livermore Falls wastewater treatment facility is a significant contributor of ortho-P to the Androscoggin River and Gulf Island Pond. Therefore, this permitting action is:

1. Carrying forward the seasonal (June 1 through September 30) monthly average concentration and mass reporting requirements for total phosphorus beginning June 1, 2006 and lasting through permit expiration;

2. Carrying forward the seasonal (June 1 through September 30) weekly average concentration and mass reporting requirements for total phosphorus beginning June 1, 2006 and lasting through September 30, 2006;

3. Carrying forward the minimum monitoring frequency requirement of once per week for total phosphorus through September 30, 2006, followed by a reduction in the monitoring frequency to once per month beginning June 1, 2007 and lasting through permit expiration;

4. Carrying forward the seasonal (June 1 through September 30) monthly average concentration reporting requirements for orthophosphate beginning June 1, 2006 and lasting through permit expiration;

5. Carrying forward the seasonal (June 1 through September 30) weekly average concentration and mass reporting requirements for orthophosphate beginning June 1, 2006 and lasting through permit expiration;

6. Establishing a new water quality-based monthly average mass limit of 8.34 lbs./day for orthophosphate beginning June 1, 2006 and lasting through permit expiration; and

7. Carrying forward the minimum monitoring frequency requirement of once per week for orthophosphorus through permit expiration;

The monthly average ortho-P mass limit of 8.34 lbs./day was derived as follows:

$$(0.5 \text{ mg/L})(8.34 \text{ gallons/pound})(2.0 \text{ MGD}) = 8.34 \text{ lbs./day}$$

The concentration criterion of 0.5 mg/L is considered by the Department as a best professional judgment standard of achievable phosphorus removal through chemical addition that will result in attainment of receiving water quality standards.

In accordance with Special Condition L, the Department reserves the right to re-open this permit at any time, with notice to the permittee, to revise the monitoring frequencies and/or establish effluent limits for total phosphorus and orthophosphate based on river monitoring data or to protect receiving water quality.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

h. pH – The previous permitting action established a pH range limitation of 6.0 – 9.0 standard units based on Department rule found at Chapter 525(3)(III)(c), which is being carried forward in this permitting action. This permitting actions also carrying forward the minimum monitoring frequency requirement of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD.

i. Whole Effluent Toxicity (WET) & Chemical-Specific Testing – Maine law, 38 M.R.S.A., Sections 414-A and 420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department rule 06-096 CMR Chapter 530.5, *Surface Water Toxics Control Program* ("toxics rule"), set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET and chemical-specific (priority pollutant) testing, as required by Chapter 530.5, is included in order to fully characterize the effluent. This permit also provides for reconsideration of effluent limits and monitoring schedules after evaluation of toxicity testing results. The monitoring schedule includes consideration of results currently on file, the nature of the wastewater, existing treatment and receiving water characteristics.

WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute and chronic WET tests are performed on invertebrate and vertebrate species. Chemical-specific, or "priority pollutant (PP)," testing is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health water quality criteria.

Pursuant to criteria established in Department rule Chapter 530.5, the Livermore Falls facility has been placed in the low frequency category for WET testing as the facility has a dilution factor greater than 100:1 and is free of the defining characteristics of the high and medium frequency categories. The facility has been placed in the high frequency category for chemical-specific (priority pollutant) testing as the facility is permitted to discharge more than 1.0 MGD.

The previous permitting action established a minimum monitoring frequency requirement for WET testing of once per year through the effective term of the permit. The previous permitting action established a minimum monitoring frequency requirement for chemical-specific testing of once per year for surveillance level (first four years of permit) years and once per calendar quarter in the screening level (last year of permit) year. A review of the WET and chemical-specific test results on file with the Department indicates that the Town has performed three (3) acute and three (3) chronic no observed effect level (NOEL) and three (3) chemical-specific tests since October 2002. See Attachment C of this Fact Sheet for a summary of the WET test results and Attachment D of this Fact Sheet for a summary of the chemical-specific test dates.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

To complete all surveillance and screening level tests required by the 10/17/01 permit, the Town must complete a total of two (2) additional WET tests and a total of five (5) additional chemical-specific tests. Department rule Chapter 530.5(B)(7)(c) contains provisions and criteria for reduced testing of municipal discharges. The Department's *Toxicity Program Implementation Protocols* states, *"Facilities with all dilution factors equal to or greater than 20:1 and no reasonable potential over a full five year cycle may receive a reduction to one round of screening testing for the complete suite of chemical specific priority pollutants."* As of the effective date of this permitting action, which precedes the expiration date of the 10/17/01 permit, the Town has not completed all required WET and chemical-specific tests of the previous permit. Therefore, the Town does not qualify for reduced WET or chemical-specific testing at this time. Upon completion of 2 additional WET tests and 5 additional chemical-specific tests at the testing frequency prescribed in Special Condition A(2), *Effluent Limitations and Monitoring Requirements*, the permittee may request that the Department reopen this permit in accordance with Special Condition M to evaluate whether the facility qualifies for reduced testing and to modify the permit as necessary based on the evaluation.

Department Rule Chapter 530.5 and Protocol E(1) of a document entitled *Maine Department of Environmental Protection, Toxicity Program Implementation Protocols*, dated July 1998, states that statistical evaluations shall be periodically performed on the most recent 60 months of WET and chemical-specific data for a given facility to determine if water quality based limitations must be included in the permit.

WET Evaluation

On September 12, 2005, the Department conducted a statistical evaluation on the aforementioned WET test results in accordance with the statistical approach outlined in the USEPA's March 1991 document entitled *Technical Support Document (TSD) for Water Quality Based Toxics Control*, Chapter 3.3.2 and Maine Department of Environmental Protection Guidance, July 1998, entitled *Toxicity Program Implementation Protocols*.

The 9/12/05 statistical evaluation indicates that the discharge has a reasonable potential (RP) to exceed the critical chronic ambient water quality criteria (AWQC) threshold (0.185%) for brook trout, but does not exceed or have a RP to exceed acute or chronic critical AWQC thresholds for any other of the WET species tested to date.

Department rule Chapter 530.5(C)(1) states, *"Appropriate water quality based effluent limits must be established in the license if a discharge contains pollutants that are, or may be discharged at levels that cause, have a reasonable potential to cause, or contribute to an ambient excursion in excess of a numeric or narrative water quality criterion."* Therefore, **this permitting action is establishing a chronic no observed effect level (C-NOEL) limit of 0.185% for brook trout** and is carrying forward the minimum monitoring frequency requirement of once per year (1/Year) through the effective term of this permit. Two subsequent tests indicate that the discharge does not exceed or have a RP to exceed acute or chronic critical AWQC thresholds for any of the WET species tested; however, the Department will review WET data as it is submitted by the Town to identify any unresolved toxicity concerns related to the discharge. The Department reserves the right to reopen this permit, with notice to the permittee, in accordance with Special Condition M to modify the monitoring frequency for WET as appropriate and necessary to protect receiving water quality.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Tests shall be conducted in a different calendar quarter each year, such that test results are available for all four calendar quarters after four years of testing. Tests shall be performed on water flea (*Ceriodaphnia dubia*) and brook trout (*Salvelinus fontinalis*).

Chemical-specific Evaluation

On September 12, 2005, the Department conducted a statistical evaluation on the aforementioned chemical-specific test results in accordance with the statistical approach outlined in the USEPA's March 1991 document entitled *Technical Support Document (TSD) for Water Quality Based Toxics Control*, Chapter 3.3.2 and Maine Department of Environmental Protection Guidance, July 1998, entitled *Toxicity Program Implementation Protocols*.

The 9/12/05 statistical evaluation indicates that the discharge does not exceed or have a reasonable potential to exceed critical thresholds or ambient water quality criteria for any of the pollutants tested.

Therefore, this permitting action is carrying forward surveillance and screening level chemical-specific testing at a minimum frequency of once per year (1/Year) and once per calendar quarter (1/Quarter) for the surveillance and screening levels, respectively. Surveillance level tests shall be conducted in a different calendar quarter each year, such that test results are available for all four calendar quarters after four years of testing. Screening level testing shall be performed in consecutive calendar quarters.

7. ANTI-BACKSLIDING

This permitting action is revising the monthly average, weekly average and daily maximum BOD_5 and TSS mass limits based on the design capacity of the treatment facility. This results in less stringent limits than the previous permitting action for the warm season period of June through September. The rationale for eliminating these monitoring requirements is contained in Fact Sheet Section 6(c), *Effluent Limitations and Monitoring Requirements*. Department rule, 06-096 CMR, Chapter 523(5)(l) contains the criteria for what is often referred to as the anti-backsliding provisions of the Federal Water Pollution Control Act (Clean Water Act). In general, the rule authorizes a permit to be reissued with less stringent limitations if *"information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified application of a less stringent effluent limitation at the time of permit issuance."* The action to revise (reduce) the BOD_5 and TSS mass limits based on new information gained through river modeling is consistent with the allowable exemptions to the anti-backsliding provisions.

8. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the waterbody to meet standards for Class C classification.

9. PUBLIC COMMENTS

Public notice of this application was made in the *Lewiston Sun Journal* newspaper on or about March 17, 2005. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

10. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from and written comments should be sent to:

William Hinkel
Division of Water Resource Regulation
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone (207) 287-7659

11. RESPONSE TO COMMENTS

During the period of May 13, 2005 through June 13, 2005, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to the Town. The Department received one significant comment from the Town in a letter dated August 16, 2005, as summarized and responded to below.

Comment #1: The Town asserts that construction costs associated with a necessary sewer line rehabilitation project is estimated at $406,000 and that sewer user rates are currently very high. The Town asserts that they can not afford to complete both the sewer collection system improvements and the treatment plant upgrades to comply with a new orthophosphate limit at this time. The Town requested an extension on implementation of phosphorus reduction projects until such time that the Town can afford the necessary plant upgrades/modifications.

Response #1: The final permit establishes a monthly average mass limitation for orthophosphate based on the Department's finding in the Androscoggin River total maximum daily load that the Livermore Falls WWTF is a significant source of orthophosphate loading to Gulf Island Pond. Whereas phosphorus monitoring required by the permit is seasonal, the numeric limit does not take effect until June 2006. Implementation of orthophosphate limits by the Livermore Falls and other facilities discharging to the Androscoggin River is critical to the improvement of receiving water quality, which is currently impaired caused by depressed dissolved oxygen levels and algae growth. Therefore, this permitting action is not providing an extension for the imposition of the monthly average orthophosphate limit to take effect in June 2006.